NCNotify

Event Notifications Powered by
NC HealthConnex

V4.0 Specifications

March 2021

Contents

1 Overview

1.1 Summary

NC*Notify is a subscription-based service that notifies providers as their patients receive services across the care continuum. Based on admission, discharge, and transfer (ADT) data received from more than 100 participating hospitals plus encounter data from more than 6,000 ambulatory care settings, the NC*Notify real-time event notifications provide care teams with valuable information that spans geography and care settings and support state and federal efforts to focus on patient centered care.

1.2 Service Options

NC*Notify provides two service options. NC*Notify v4 is targeted at organizations that can generate a patient panel, may wish to integrate notification files into their systems, and often have a high volume of patients for whom they would like to receive notifications. NC*Notify v4+ is suitable for organizations who want to receive more targeted notifications for a subset of their patients and leverage the NC HealthConnex platform for downstream processing and coordination of follow-up activities. Both service options have the capability to receive alerts for additional events based on data in the NC HealthConnex patient longitudinal records.

2 Subscribing to NC*Notify

2.1 Enrollment

To subscribe to NC*Notify, an enrollment form must be completed and submitted to hiea@nc.gov. Staff from the North Carolina Health Information Exchange Authority (NC HIEA) will validate the enrollment to make sure that the organization wishing to enroll is eligible to receive notifications. The NC HIEA staff will reach out to schedule a meeting with the subscriber to review options and specifications.

Based on these discussions, subscribers can enroll in NC*Notify v4 or NC*Notify v4+. The NC HIEA will then pass the enrollment request on to the NC HIEA's technical partner, SAS Institute. SAS will work with the subscriber to create a connection (if needed), create and submit patient panels, and receive notifications.

3 NC*Notify v4

3.1 Patient panels

Patient panels are required for NC*Notify v4. Subscribers may choose to securely deliver these files to SAS via Secure File Transfer Protocol (sFTP) or Direct Secure Messaging (DSM). Details for these connections are provided in Appendix A. Patient panels may be updated no more than once per week. Patient panels must be updated at a minimum of once every 90 days to ensure subscribers are receiving notifications for patients with whom they have a current relationship.

Subscribers to NC*Notify v4 can choose to send a full replacement patient panel, or a patient panel which updates an existing panel. When sending replacement panels, all patients will be marked for addition. When sending update panels, patients within the panel will be marked either for deletion, addition, or update. The processing of the patient panel and handling of each patient is determined based on the name of the file and the first column in the file. For details on naming the files and the required format and content for patient panels, see Appendix D.

3.2 Notifications

Subscribers to NC*Notify v4 can choose to receive notifications via a flat file, HL7 v2 messages, or Continuity of Care Document (CCD). Notification files can be delivered weekly, once per day, or several times per day. HL7 and CCD messages will be delivered as soon as they are processed by NC HealthConnex.

3.2.1 Notification files

A notification file will be generated for each NC*Notify v4 subscriber according to the schedule determined during enrollment. When a relevant event occurs, a new row will be added to the notification file. Each row of the notification file will consist of the values from the patient panel and additional information generated by NC*Notify. Duplicate events will be removed resulting in one row per event. See Appendix E for details on the notification file.

3.2.2 HL7 notifications

Subscribers to NC*Notify v4 who would like to receive notifications as HL7 v2 will require a Transport Layer Security (TLS) or sFTP connection to NC HealthConnex, and the ability to ingest this data into their system. Details of the HL7 method and message content can be found in Appendix F.

3.2.3 CCD notifications

Subscribers to NC*Notify v4 who would like to receive notifications as CCDs will require a TLS or sFTP connection to NC HealthConnex and the ability to ingest this data format into their system. Details of the CCD content can be found in Appendix G.

The triggering events resulting in a CCD notification, include outpatient visits (e.g. ADT^A04) and inpatient discharges (e.g. ADT^A03). In order to receive notifications for other events, subscribers should enroll with another delivery method such as HL7 or flat-file.

4 Version History

V1.0 - September 4, 2018

V2.0 - May 30, 2019

V2.1 - August 5, 2019

V2.1.1 - August 19, 2019

V3 - June 9, 2020

V3.1 - July 20, 2020

V3.1 - July 23, 2020

V4.0 - January 22, 2020

- Updated “v3” references to “v4”
- Updated section 1 to include additional event triggers
- Added section 3.2.3 for CCD delivery
- Added place of service fields to table 4 (outbound notification file details)
- Added place of service fields to Table 1 (HL7 segments in notification messages)
- Changed VPN to TLS references

Appendix A Secure exchange of patient panels

For sending patient panels, subscribers can choose either Direct Secure Messaging (DSM) or sFTP panel. If DSM is chosen and the subscriber does not yet have a DSM address, one can be provided. Details for the sFTP connection are provided below.

Appendix A.1 Secure File Transfer (sFTP)

1) Setup

In order to exchange files via sFTP with NC HealthConnex, there must be some configuration within the SAS environments. This includes whitelisting of the IP and port of the sender, as well as setup of an sFTP account for the subscriber.

2) Connecting

There are several methods for connecting to the sFTP server. One method is via the web portal managed by SAS. The user account provided by SAS can be used to login to this portal from the IP address configured during the setup. The sFTP server can also be reached via an FTP client or the command line if the connection is originating from the IP configured during the setup process. The same account information is used in either scenario.

3) Directory Structure

Regardless of the sFTP method used to connect and exchange files, the following information applies to the configuration of the directories that will be encountered. At the top level, there are two directories:

- Incoming
- Outgoing

These directories indicate the direction of exchange *relative to SAS*. For instance, the incoming directory is the location for files sent from the subscriber to SAS.

Appendix B Secure exchange of notification flat files

For receiving notification flat files, subscribers can receive flat files via sFTP.

Appendix B.1 Secure File Transfer (sFTP)

1) Setup

In order to exchange files via sFTP with NC HealthConnex, there must be some configuration within the SAS environments. This includes whitelisting of the IP and port of the sender, as well as setup of an sFTP account for the subscriber.

2) Connecting

There are several methods for connecting to the sFTP server. One method is via the web portal managed by SAS. The user account provided by SAS can be used to login to this portal from the IP address configured during the setup. The sFTP server can also be reached via an FTP client or the command line if the connection is originating from the IP configured during the setup process. The same account information is used in either scenario.

3) Directory Structure

Regardless of the sFTP method used to connect and exchange files, the following information applies to the configuration of the directories that will be encountered. At the top level, there are two directories:

- Incoming
- Outgoing

These directories indicate the direction of exchange *relative to SAS*. For instance, the Outgoing directory is the location for notification files sent to the subscriber from SAS.

Appendix C Secure Exchange of HL7 v2 messages and CCDs

For receiving HL7 messages or CCDs, subscribers can choose either TLS or sFTP. Details for the sFTP and TLS connections are below.

HL7 messages sent over sFTP will be batched at a frequency mutually agreed upon during the onboarding setup. HL7 messages sent over TLS connection will be processed immediately by NC*Notify and sent to subscribers.

Appendix C.1 Secure File Transfer (sFTP)

1) Setup

In order to exchange files with NC HealthConnex via sFTP, there must be some configuration within the SAS environments. This includes whitelisting of the IP and port of the sender, as well as setup of an sFTP account for the subscriber.

2) Connecting

There are several methods for connecting to the sFTP server. One method is via the web portal managed by SAS. The user account provided by SAS can be used to login to this portal from the IP address configured during the setup. The sFTP server can also be reached via an sFTP client or the command line if the connection is originating from the IP configured during the setup process. The same account information is used in either scenario.

3) Directory Structure

Regardless of the sFTP method used to connect and exchange files, the following information applies to the configuration of the directories that will be encountered. At the top level, there are two directories:

- Incoming
- Outgoing

These directories indicate the direction of exchange relative to SAS. For instance, the outgoing directory is the location for files sent from SAS to the subscriber. These directories are where notification files will be placed.

Appendix C.2 Transport Layer Security (TLS)

1) Setup

In order to allow sending HL7 messages to a subscriber via TLS, the NC HealthConnex team will engage with the networking team at SAS. The subscriber networking team will need to be available to apply certificates, test connectivity, and troubleshoot any issues. The following parameters will be needed for configuration:

- IP Address
- TLS Certificate

Appendix D Patient panel specifications

Appendix D.1 Patient panel file name

The inbound file should be named according to the following

naming convention: <ORGCODE>-1-<LOADTYPE>-<DATE>.csv

- <ORGCODE> will be provided by SAS
- <LOADTYPE> will be either "Z" for overwrite (most common) or "D" incremental changes, including additions, deletions, and updates
- <DATE> will be formatted as YYYYMMDD

Examples:

PRACTICE2-1-Z-20200315.csv

Appendix D.2 Replacement patient panel content

The file will be a flat text file and contain a header row and at least one row in the body. Each row in the file will contain fields delimited by a "," comma. The rows will end with the following ascii characters: carriage return (0x0D) and line feed (0x0A). All fields will be delimited, regardless of whether there is data in the field. The expected content of the body rows is depicted in the below table. The required fields are denoted by a 'Y' in the "Value Required" column. CustomFields 2 through 5 can be used to track information about a patient that a subscriber would like to see in the notification file. For example, if the patient is part of a special project or initiative, a CustomField could be used to indicate that.

Note: Only commas used to delimit fields will be included. Other commas should be removed before sending.

Field Name	Value Required	Max Length	Data Requirements
MemberStatus	Y	6	ADD. For panels that are to be overwritten the value will be "ADD" on every row.
OrganizationID	Y	50	Alphanumeric code. Provided by NC HealthConnex.
OrganizationName	Y	None	Full legal name of Organization. Provided by NC HealthConnex.
Practice	N	None	Practice within the organization
NPI	N	50	NPI of the Patient's Primary Care Provider (if known)
PCPName	N	None	First and Last Name of the Patient's PCP
LocalPatientID	Y	50	An ID that uniquely identifies the patient across the organization such as an Enterprise ID, MRN, HICNO.
PatientLastName	Y	80	No suffixes
PatientFirstName	Y	60	No middle initials
PatientMiddleName	N	60	
PatientNameSuffix	N	60	
DateOfBirth	Y	50	Format: YYYYMMDD
Gender	Y	50	Supported Values: F = Female, M = Male, U = Unknown

Address	Y	220	
City	Y	50	
State	Y	50	Standard 2-digit state code.
PostalCode	Y	5	Only basic 5-digit code required (e.g. 27613)
HomePhone	N	50	Numbers with no spaces or special characters. E.g. 9193334444
CellPhone	N	50	Numbers with no spaces or special characters. E.g. 9193334444
WorkPhone	N	50	Numbers with no spaces or special characters. E.g. 9193334444
SSN	N	50	Up to 11 characters, including dashes
DriversLicense	N	50	The official driver's license number
Subprogram	N	220	Alphanumeric code provided by NC HealthConnex
CustomField2	N	None	For use by Subscriber
CustomField3	N	None	For use by Subscriber
CustomField4	N	None	For use by Subscriber
CustomField5	N	None	For use by Subscriber

1) Example header row

The header row should appear exactly as indicated below.

MemberStatus,OrganizationID,OrganizationName,Practice,NPI,PCPName,LocalPatientID,PatientLastName,PatientFirstName,PatientMiddleName,PatientNameSuffix,DateOfBirth,Gender,Address,City,State,PostalCode,HomePhone,CellPhone,WorkPhone,SSN,DriversLicense,Subprogram,CustomField2,CustomField3,CustomField4,CustomField5

2) Example body rows

Three example rows are provided below.

ADD,HOSP1,General Hospital,City Obstetrics,1234567890,,4567890,Smith,Sally,Anne,,19901231,F,123 Main Street,Greensboro,NC,23456,9193334444,9191234567,5134567890,,,,program1,,,

ADD,HOSP1,General Hospital,City Family Practice,9876543219,Dr. Jones,654321,Madison,Michael,R,Jr,19520720,M,12 Elm St. Apt.2,Raleigh,NC,27506,9198765432,9198765432,4135556666,111223333,123456,,program2,,,

ADD,PRACTICE1,Salem Pediatrics,,,,567890,Adams,Aaron,David,,20020805,M,456 Hwy 64,Holly Springs,NC,23207,9096543214,,,777889999,,,,,,

Appendix D.3 Update patient panel content

The file will be a flat text file and contain a header row and at least one row in the body. Each row in the file will contain fields delimited by a "," comma. The rows will end with the following ascii characters: carriage return (0x0D) and line feed (0x0A). All fields will be delimited, regardless of whether there is data in the field. The expected content of the body rows is depicted in the below table. The required fields are denoted by a 'Y' in the "Value Required" column. Custom Fields 2 through 5 can be used to track information about a patient that a subscriber would like to see in the Outbound Result File. For example, if the patient is part of a special project or initiative, a Custom Field could be used to indicate that.

Note: Only commas used to delimit fields will be included. Other commas should be removed before sending.

Table 3. Incremental patient panel file details

Field Name	Value Required	Max Length	Data Requirements
MemberStatus	Y	6	Supported Values: ADD, UPDATE, DELETE
OrganizationID	Y	50	Alphanumeric code. Provided by NC HealthConnex.
OrganizationName	Y	None	Full legal name of Organization. Provided by NC HealthConnex.
Practice	N	None	Practice within the organization
NPI	N	50	NPI of the Patient's Primary Care Provider (if known)
PCPName	N	None	First and Last Name of the Patient's PCP
LocalPatientID	Y	50	An ID that uniquely identifies the patient across the organization such as an Enterprise ID, MRN, HICNO.
PatientLastName	Y	80	No suffixes
PatientFirstName	Y	60	No middle initials
PatientMiddleName	N	60	
PatientNameSuffix	N	60	
DateOfBirth	Y	50	Format: YYYYMMDD
Gender	Y	50	Supported Values: F = Female, M = Male, U = Unknown
Address	Y	220	
City	Y	50	
State	Y	50	Standard 2-digit state code.
PostalCode	Y	5	Only basic 5-digit code required (e.g. 27613)
HomePhone	N	50	Numbers with no spaces or special characters. E.g. 9193334444
CellPhone	N	50	Numbers with no spaces or special characters. E.g. 9193334444
WorkPhone	N	50	Numbers with no spaces or special characters. E.g. 9193334444
SSN	N	50	Up to 11 characters, including dashes
DriversLicense	N	50	The official driver's license number
Subprogram	N	220	Alphanumeric code provided by NC HealthConnex
CustomField2	N	None	For use by Subscriber
CustomField3	N	None	For use by Subscriber
CustomField4	N	None	For use by Subscriber
CustomField5	N	None	For use by Subscriber

1) Example Header Row

The header row should appear exactly as indicated below.

MemberStatus,OrganizationID,OrganizationName,Practice,NPI,PCPName,LocalPatientID,PatientLastName,PatientFirstName,PatientMiddleName,PatientNameSuffix,DateOfBirth,Gender,Address,City,State,PostalCode,HomePhone,CellPhone,WorkPhone,SSN,DriversLicense,Subprogram,CustomField2,CustomField3,CustomField4,CustomField5

2) Example Body Rows

Three example rows are provided below.

ADD,HOSP1,General Hospital,City Obstetrics,1234567890,,4567890,Smith,Sally,Anne,,19901231,F,123 Main Street,Greensboro,NC,23456,9193334444,9191234567,5134567890,,,,program1,,,

UPDATE,HOSP1,General Hospital,City Family Practice,9876543219,Dr. Jones,654321,Madison,Michael,R,Jr,19520720,M,12 Elm St. Apt.2,Raleigh,NC,27506,9198765432,9198765432,4135556666,111223333,123456,,program2,,,

DELETE,PRACTICE1,Salem Pediatrics,,,,567890,Adams,Aaron,David,,20020805,M,456 Hwy 64,Holly Springs,NC,23207,9096543214,,,777889999,,,,,,

Appendix E Notification file specifications

Appendix E.1 File Name

The Outbound Result File will be named according to the following naming convention:

<DATETIME>_EventNotification-<ORGCODE>_results.csv

Where:

- <ORGCODE> will be provided by SAS
- <DATETIME> will be formatted as YYYYMMDDHHMMSSmmm

Examples:
20200410052525222_EventNotification-PRACTICE2_results.csv

Table 4. Outbound notification file details (shaded rows indicate data provided by NC*Notify)

Name	Required	Max Length	Data Requirements
OrganizationID	Y	50	Alphanumeric code. Provided by NC HealthConnex.
OrganizationName	Y	None	Full legal name of Organization. Provided by NC HealthConnex.
Practice	N	None	Practice within the organization
NPI	N	50	NPI of the Patient's Primary Care Provider (if known)
PCPName	N	None	First and Last Name of the Patient's PCP
LocalPatientID	Y	50	An ID that uniquely identifies the patient across the organization such as an Enterprise ID, MRN, HICNO.
PatientLastName	Y	80	No suffixes
PatientFirstName	Y	60	No middle initials
PatientMiddleName	N	60	
PatientNameSuffix	N	60	
DateOfBirth	Y	50	Format: YYYYMMDD
Gender	Y	50	Supported Values: F = Female, M = Male, U =
Address	Y	220	Unknown
City	Y	50	
State	Y	50	Standard 2-digit state code.
PostalCode	Y	5	Only basic 5-digit code required (e.g. 27613)
HomePhone	N	50	Numbers with no spaces or special characters. E.g. 9193334444
CellPhone	N	50	Numbers with no spaces or special characters. E.g. 9193334444
WorkPhone	N	50	Numbers with no spaces or special characters. E.g. 9193334444
SSN	N	50	Up to 11 characters, including dashes
DriversLicense	N	50	The official driver's license number
Subprogram	N	220	Alphanumeric code provided by NC HealthConnex
CustomField2	N	None	For use by Subscriber
CustomField3	N	None	For use by Subscriber
CustomField4	N	None	For use by Subscriber
CustomField5	N	None	For use by Subscriber
SourceFeed	Y	None	Source of the original message
SourceOrganization	Y	None	Organization where the visit took place

SourceFacility	Y	None	Facility where the visit took place
SourceDepartment	Y	None	Department or unit where the visit took place
SourceMRN	Y	None	Patient MRN associated with source organization
EventDate	Y	12	Date of Clinical Event. Format YYYYMMDDHHMM
PatientClass	Y	1	E = EMERGENCY, I = INPATIENT, O = OUTPATIENT, P = PREADMIT, R = RECURRING_PATIENT, B = OBSTETRICS, C = COMMERCIAL_ACCOUNT, N = NOT_APPLICABLE, U = UNKNOWN. UNKNOWN is used for any Patient Class not matching one of these values. (see Table 32, PV1 of NCQ Minimum Data Specifications)
EventType	Y	1	Clinical Event Type A = Admit/Visit, D = Discharge
AdmitDate	N	8	Format: YYYYMMDD
AdmitTime	N	8	Format: HHMMSS
AdmitReasonCode	N	None	
AdmitReasonDescription	N	None	
AdmitTypeCode	N	None	
AdmitTypeDescription	N	None	
ReferralInfo	N	200	Referrer First Name Last Name
DischargeDate	N	8	Format: YYYYMMDD
DischargeTime	N	8	Format: DDHHMMSS
DeathIndicator	N	3	Death Indicator. Yes or No
DeathDateTime	N	14	Format: YYYYMMDDHHMMSS
DiagnosisCode	N	None	Encounter diagnosis code. If encounter diagnosis is not available, chief complaint will be provided.
DiagnosisDescription	N	None	Encounter diagnosis description. If encounter diagnosis is not available, chief complaint will be provided.
VisitNumber	N	None	The visit number from the organization where the encounter occurred
DischargeDispositionCode	N	3	Discharge Disposition Code
DischargeDispositionDescri	N	None	Discharge Disposition Description
DischargeLocationCode	N	50	Discharge Location
DischargeLocationDescripti	N	None	
AttendingPhysician	N	None	

1) Example Header Row

The header row will appear exactly as indicated below.

MemberStatus,OrganizationID,OrganizationName,Practice,NPI,PCPName,LocalPatientID,PatientLastName,PatientFirstName,PatientMiddleName,PatientNameSuffix,DateOfBirth,Gender,Address,City,State,PostalCode,HomePhone,CellPhone,WorkPhone,SSN,DriversLicense,Subprogram,CustomField2,CustomField3,CustomField4,CustomField5,SourceFeed,SourceOrganization,SourceFacility,SourceDepartment,SourceMRN,EventDate,PatientClass,EventType,AdmitDate,AdmitTime,AdmitReasonCode,AdmitReasonDescription,AdmitTypeCode,AdmitTypeDescription,ReferralInfo,DischargeDate,DischargeTime,DeathIndicator,DeathDateTime,Diagnosis

Code,DiagnosisDescription,VisitNumber,DischargeDispositionCode,DischargeDispositionDescription,DischargeLocationCode,DischargeLocationDescription,AttendingPhysician

2) Example Body Rows

Two example rows are provided below.

HOSP1,General Hospital,City Obstetrics,1234567890,,4567890,Smith,Sally,Anne,,19901231,F,123 MainStreet,Greensboro,NC,23456,9193334444,9191234567,5134567890,,,,program1,,,,EMR,Country Family,Country Family Practice
Greensboro,,345678,20200530,O,A,20200530,101521,R21,Skin Rash,3,Elective,Smith,,,,,DX-123,Cond1,33334455,7,Home,,,House

PRACTICE1,Salem Pediatrics,,,,567890,Adams,Aaron,David,,20020805,M,456 Hwy 64,Holly Springs,NC,23207,9096543214,,,777889999,,,,,,,HOSPSYSTEM2,NC Hospital System,Raleigh Hospital,3West, 135793575,20200530,E,D,,,A91,Dengue Suspect,2,Urgent,,20200530,123000,Yes,20200530,,,98765,2,,,,Jones

HOSP1,General Hospital,City Family Practice,987654321,Dr. Jones,654321,Madison,Michael,R,Jr,19520720,M,12 Elm St.,Apt. 2,Raleigh,NC,27506,9198765432,MC,999998888,123456,,,,,,HOSPSYSTEM,NC Hospital System,Hillside Orthopedics,,8642,20200530,O,A,20200530,113000,R52,Body aches,3,Elective,Clark,,,No,,DX-345,Problem2,66778899,2,,,,Wallace

Appendix F HL7 message specifications

HL7 Messages sent by NC*Notify will be HL7 v2.5.1 messages. They can be sent as flat files or as individual messages over a standard HL7 interface. Data sent to a subscriber is dependent on the data being sent by the organization where the event takes place.

Appendix F.1 ADT Notifications

ADT events that are sent to subscribers include:

- ADT^A01
- ADT^A04
- ADT^A03

ADT messages will have the following naming convention:

<DATETIME>_EventNotification-<ORGCODE>_results.adt

Where:

- <ORGCODE> will be provided by SAS
- <DATETIME> will be formatted as YYYYMMDDHHMMSSmmm

Examples:
20200410052525222_EventNotification-PRACTICE2_results.adt
202004100525253_EventNotification-HOSP1_results.adt

Table 5. HL7 segments in notification messages

MSH		
MSH	MSH.1.1	Field Separator
MSH	MSH.2.1	Encoding Characters
MSH	MSH.3.1	Sending Application
MSH	MSH.4.1	Source Code (Sending Organization)
MSH	MSH.7.1	Message Date Time
MSH	MSH.9.1	Message Type
MSH	MSH.9.2	Event Trigger
MSH	MSH.9.3	Message Structure
MSH	MSH.10.1	Message Control ID
MSH	MSH.11.1	Processing ID
MSH	MSH.12.1	Version ID
EVN		
EVN	EVN.1.1	Event Type
EVN	EVN.2.1	Event Recorded Date Time
EVN	EVN.7.1	Event Organization
PID		
PID	PID.1.1	Set ID
PID	PID.3.1	Patient Identifier NOTE: The first repetition will contain the patient identifier present in NC HealthConnex for the visit specified in the alert. The second repetition will

		contain the local patient identifier sent by the subscriber in the Patient Panel.
PID	PID.3.4	Patient Identifier - Assigning Authority
PID	PID.3.5	Patient Identifier – ID Type Code NOTE: In the first repetition ID Type Code will = MR. In the second repetition ID Type Code will = PI.
PID	PID.3.6	Patient Identifier – Assigning Facility
PID	PID.5.1	Patient Family Name
PID	PID.5.2	Patient Given Name
PID	PID.5.3	Patient Middle Name
PID	PID.5.4	Patient Name Suffix
PID	PID.5.5	Patient Name Prefix
PID	PID.5.7	Patient Name Type Code
PID	PID.5.14	Patient Name Professional Suffix
PID	PID.7.1	Patient DOB
PID	PID.8.1	Patient Gender
PID	PID.9.1	Patient Alias Family Name
PID	PID.9.2	Patient Alias Given Name
PID	PID.9.3	Patient Alias Middle Name
PID	PID.9.4	Patient Alias Suffix
PID	PID.10.1	Patient Race ID
PID	PID.10.2	Patient Race Text
PID	PID.10.3	Patient Race Coding System
PID	PID.11.1	Patient Address Street 1
PID	PID.11.2	Patient Address Street 2
PID	PID.11.3	Patient Address City
PID	PID.11.4	Patient Address State
PID	PID.11.5	Patient Address Zip
PID	PID.11.6	Patient Address Country
PID	PID.11.9	Patient Address County Code
PID	PID.13.1	Patient Telephone Home
PID	PID.13.2	Patient Telephone Use Code
PID	PID.13.3	Patient Telephone Equipment Type
PID	PID.13.4	Patient Telephone Email Address
PID	PID.13.5	Patient Telephone Country Code
PID	PID.13.6	Patient Telephone Area Code
PID	PID.13.7	Patient Telephone Number
PID	PID.13.8	Patient Telephone Extension
PID	PID.13.9	Patient Telephone Any Text
PID	PID.14.1	Patient Telephone Business
PID	PID.14.2	Patient Telephone Use Code
PID	PID.14.3	Patient Telephone Equipment Type
PID	PID.14.5	Patient Telephone Country Code

PID	PID.14.6	Patient Telephone Area Code
PID	PID.14.7	Patient Telephone Number
PID	PID.14.8	Patient Telephone Extension
PID	PID.14.9	Patient Telephone Any Text
PID	PID.15.1	Patient Primary Language ID
PID	PID.15.2	Patient Primary Language Text
PID	PID.15.3	Patient Primary Language Coding System
PID	PID.16.1	Patient Marital Status ID
PID	PID.16.2	Patient Marital Status Text
PID	PID.16.3	Patient Marital Status Coding System
PID	PID.17.1	Patient Religion ID
PID	PID.17.2	Patient Religion Text
PID	PID.17.3	Patient Religion Coding System
PID	PID.19.1	Patient SSN
PID	PID.22.1	Patient Ethnicity Group ID
PID	PID.22.2	Patient Ethnicity Group Text
PID	PID.22.3	Patient Ethnicity Group Coding System
PID	PID.29.1	Patient Death Date and Time
PID	PID.30.1	Patient Death Indicator
PID	PID.33.1	Patient Last Update Date and Time
PID	PID.34.1	Patient Last Update Facility Text
PID	PID.34.2	Patient Last Update Facility ID
PID	PID.34.3	Patient Last Update Facility ID Type
PV1		
PV1	PV1.1.1	Visit Set ID
PV1	PV1.2.1	Visit Patient Class
PV1	PV1.3.1	Visit Department
PV1	PV1.3.4	Visit Facility
PV1	PV1.4.1	Visit Admit Type
PV1	PV1.7.1	Visit Doctor Attending ID
PV1	PV1.7.2	Visit Doctor Attending Family Name
PV1	PV1.7.3	Visit Doctor Attending Given Name
PV1	PV1.7.9	Visit Doctor Attending Assigning Authority
PV1	PV1.8.1	Visit Doctor Referring ID
PV1	PV1.8.2	Visit Doctor Referring Family Name
PV1	PV1.8.3	Visit Doctor Referring Given Name
PV1	PV1.8.9	Visit Doctor Referring Assigning Authority
PV1	PV1.9.1	Visit Doctor Consulting ID
PV1	PV1.9.2	Visit Doctor Consulting Family Name
PV1	PV1.9.3	Visit Doctor Consulting Given Name
PV1	PV1.9.9	Visit Doctor Consulting Assigning Authority
PV1	PV1.10.1	Visit Hospital Service

PV1	PV1.14.1	Visit Admit Source
PV1	PV1.17.1	Visit Doctor Admitting ID
PV1	PV1.17.2	Visit Doctor Admitting Family Name
PV1	PV1.17.3	Visit Doctor Admitting Given Name
PV1	PV1.17.9	Visit Doctor Admitting Assigning Authority
PV1	PV1.19.1	Visit Number (Unique Encounter Code)
PV1	PV1.36.1	Visit Discharge Disposition
PV1	PV1.44.1	Visit Admit Date Time
PV1	PV1.45.1	Visit Discharge Date Time
PV2		
PV2	PV2.1.1	Set ID - PV2
PV2	PV2.3.1	Visit Admit Reason Code
PV2	PV2.3.2	Visit Admit Reason Description
PV2	PV2.3.3	Visit Admit Reason Coding System
DG1		
DG1	DG1.1.1	Diagnosis Set ID
DG1	DG1.3.1	Diagnosis Code
DG1	DG1.3.2	Diagnosis Code Description
DG1	DG1.3.3	Diagnosis Code Coding System
IN1		
IN1	IN1.1.1	Insurance Set ID
IN1	IN1.2.1	Insurance Plan ID
IN1	IN1.4.1	Insurance Company - Name
IN1	IN1.8.1	Insurance Group Number
IN1	IN1.12.1	Insurance Plan Date Effective
IN1	IN1.36.1	Policy Number

1) Example HL7 Messages

A01:

MSH|^~\&|NCHIEA^2.16.840.1.113883.3.4234.2^ISO|
AGAPE^1.2.840.114350.1.13.66.3.7.2.696570.61^ISO |||202011021620||ADT^A01^ADT_A01|
65685,76836.802137|P|2.5.1
EVN|A01|202011021620|||||Agape Washington CHC
PID|1||PAT-13^^^AGAPEEPI^MR^AGAPE~BRHS-
1^^^PI^BRHS||FITZGERALD^FAUNA^^^^^L||19670315|F|||3901 FIRST
ST^^ITHACA^NY^14850||
(608)555-1234^PRN^PH^^^608^555-1234^Home~(941)555-1234^ORN^CP^^^941^555-123
4^Mobile|(914)555-1234^WPN^PH^^^914^555-
1234^Work|^^|^^|^^||||||||||||N|||20181220120236|
AGAPE^1.2.840.114350.1.13.66.3.7.2.696570.6 1^ISO
PV1|1|I|^^^||||^^^^^^^^|^^^^^^^^|^^^^^^^^|||||||^^^^^^^^||ABC|||||||||||||||||Separation|Dis c-
loc|||||||20201101080808|
DG1|1||DX-ABC^Super Special^MyDxCode

A03:

MSH|^~\&|NCHIEA^2.16.840.1.113883.3.4234.2^ISO|
CFVM^2.16.840.1.113883.3.5588.2.100^ISO|||20210 2091254||ADT^A03^ADT_A03|
65784,64464.80416|P|2.5.1
EVN|A03|202102091254|||||Cape Fear Valley Health System
PID|1||5000000649^^^CFVM^MR^CFVM~5000000649^^^DUHSEPI^PI^DUHS||
INTTESTFIFTYFOUR^ROUND ONE^BLFP^^^^L||20201215|M||Asian Indian^Asian
Indian^CFVM_Race|1700 COLUMBIA
AVE^^DUNN^NC^28334^USA^^^HARNETT||||ENG^ENG^CFVM_Language|
SINGLE^SINGLE^CFVM_MaritalS tatus|NONE^NONE^CFVM_Religion||000000000|||
NOT HISPANIC^NOT
HISPANIC^CFVM_Ethnicity|||||||Y|||20210209103409|
CFVM^2.16.840.1.113883.3.5588.2.100^ISO PV1|1|O|BUFLK MED^^^CFVM||||30244^PERRY-
LINDLEY^KATASHA^^^^^^CFVM_Clinician|||CFVH|||||||||10100271012|||||||||||||||||||||||||2021
0209080148|20210209103405
DG1|1||Z00.129^Encounter for routine child health examination without abnormal
findings^I10

A04:

MSH|^~\&|NCHIEA^2.16.840.1.113883.3.4234.2^ISO|HYRMC^2.16.840.1.113883.3.7770^ISO|||
20201118 1422||ADT^A04^ADT_A04|65701,69729.051267|P|2.5.1
EVN|A04|202011181422|||||Haywood Regional Medical Center
PID|1||0407806^^^HYRMC^MR^HYRMC~100000483089^^^UNCHCSEPI^PI^UNCHCS||
PAN^PETER^^^^^L| |20000624|M||2106-3^White^HL7_0005_Race|523 PEANUT
LANE^^RICHLANDS^NC^28574^US^^^ONSLOW||||
en^English^HYRMC_PrimaryLanguage|D^D^HL7_0002_ MaritalStatus|
000^000^HYRMC_Religion||999999999|||N^Not Hispanic or
Latino^HL7_0189_Ethnicity|||||||Y|||20201026130611|HYRMC^2.16.840.1.113883.3.7770^ISO
PV1|1|O|^^^HYRMC|3|||DUBBA^DUBIEL^BARBARA^^^^^^HYRMC|
DUBBA^DUBIEL^JONATHAN^^^^^^HY RMC|DUBBA^DUBIEL^ZACH^^^^^^HYRMC|CAR||||
2|||DUBBA^DUBIEL^BARBARA^^^^^^HYRMC||200958 697|||||||||||||||||36|37|||||||
20201117130300|20201117130300
PV2|1||^ECHO*******XRAYS ALSO*******^
DG1|1||Z00.00^Routine general medical examination at a health care facility^I10
IN1|1|25099905^25099905|48|QTC MEDICAL VA XRAY LAB
PFT|||||||||19980101000000|||||||||||||||||||||||4998750

Appendix G CCD specifications

CCD messages received as part of NC*Notify will be formatted according to the Consolidated Clinical Document Architecture Release 2.1 (CCDA R2.1) standard. They will contain longitudinal clinical data from NC HealthConnex for the patient, spanning multiple sending organizations. Data included in the CCD sent to a subscriber is dependent on the data being sent by the organization where the event takes place.

CCD messages will have the following naming convention:

<DATETIME>_EventNotification-<ORGCODE>_results.xml

Where:

- <ORGCODE> will be provided by SAS
- <DATETIME> will be formatted as YYYYMMDDHHMMSSmmm

Examples:
20200410052525222_EventNotification-PRACTICE2_results.xml
202004100525253_EventNotification-HOSP1_results.xml

More information on the CCDA R2.1 format can be found in the HL7 CDA® R2 Implementation Guide.